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DATABASE FOR DOLPHIN TAGGING OPERATIONS IN THE EASTERN TROPICAL PACIFIC, 1969-1978, WITH DISCUSSION OF 1978 TAGGING RESULTS

by

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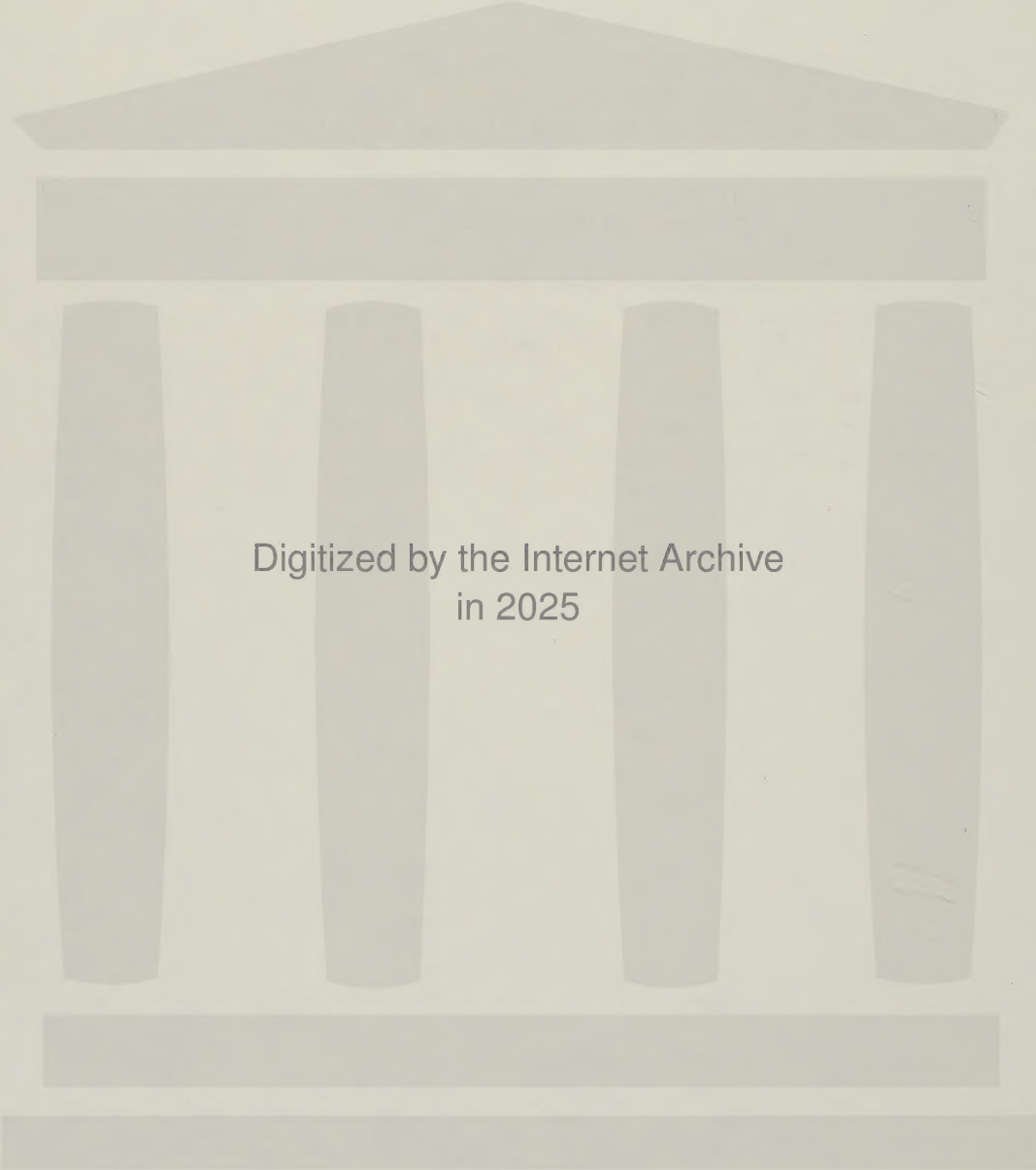
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INTRODUCTION

Researchers from the Southwest Fisheries Center (SWFC) conducted dolphin tagging operations in the eastern tropical Pacific (ETP) from 1969 to 1978. Records of resights and tag recoveries continued after 1978, and the last resighting was recorded in 1980. The primary purpose for tagging dolphins was to examine dolphin movements (Perrin et al. 1979). Dolphins were tagged with a coded tag, and some animals were given injections of lead acetate or tetracycline for marking hard parts such as teeth and bones for age analysis after specimen recapture. A study was made in 1978 to determine sampling designs for mark-recapture experiments on dolphins in the ETP (Southward and Urquart 1978). However, the findings were not utilized in field experiments. During a 1978 cruise, researchers tried to estimate dolphin school size and school integrity with the use of radio transmitters attached to one or two dolphins in a herd of tagged and untagged dolphins (Powers et al. 1979).

Perrin et al. (1979) described the cetacean-tagging operations of the SWFC for the period 1969 to 1976. They reported that 3,712 animals were tagged in this period. By species these were 2,996 spotted dolphins (Stenella attenuata), 324 spinner dolphins (Stenella longirostris), 193 common dolphins (Delphinus delphis), 113 bottlenose dolphins (Tursiops truncatus), 15 Pacific white-sided dolphins (Lagenorhynchus obliquidens), 2 short-finned pilot whales (Globicephala macrorhynchus), 4 striped dolphins (Stenella coeruleoalba) and 65 unidentified animals. These included 949 dolphins tagged by the Inter-American Tropical Tuna Commission and 37 dolphins tagged by a tuna fisherman. Described in the manuscript were the types of tags used, a chronological account of tagging operations, geographical positions of release or recovery points, and directions of movement as ascertained from tag recaptures. Various types of tags were used in these tagging operations. The primary type used was a spaghetti or streamer tag with either a plastic or metal dart. Release and recapture data were recorded on 3" x 5" index cards. Perrin concluded that the home range of spotted dolphins was 200-300 nautical miles in extent and he hypothesized that movement was coastward (to the east) in fall and offshore (to the west) in late spring and summer.

No dolphins were tagged, and no tags were recovered or resighted in 1977. But then in 1978, spotted dolphins and spinner dolphins were tagged during a single cruise of a chartered tuna purse seiner as part of a dedicated vessel research program. The tags used were highly visible disk tags fixed on either side of the dorsal fins by single, stainless steel bolts. This design was selected for resightability and to prevent tag

losses after the tags had been attached to the animals. Additionally, dorsal fins were notched with codes to the purse seine sets in which the animals were captured and released. Disk tags were placed on 642 spotted dolphins and 15 eastern spinner dolphins. Ten spotted dolphins were tagged by notch codes only, and 6 spotted dolphins were affixed with radio tags. Animals were injected with tetracycline in five of a total of nine sets where tagging was done. Powers also described tracking of the dolphins affixed with radio beacon tags.

Many of the results of the 1978 tagging were presented by Jennings and Stives (1979). The tag release, resight, and recapture data which resulted from the 1978 cruise were entered into a computer data file and in 1981 copied to a tape file (PTAGCD.DAT) compatible with the VAX system at the University of California at San Diego (UCSD). Perrin et al. (1984, in press) reiterated the east-west migration hypothesis for northern offshore spotted dolphins, supported by the resightings of these 1978 tags.

In addition to the studies by Perrin et al. (1979) and Powers et al. (1979), papers by Hobbs (1982), White et al. (1981) and the National Fisheries Engineering Laboratory (1978) describe various cetacean tags, including most of those released by the SWFC from 1969 through 1978.

The purpose of this present report is to document the SWFC dolphin tagging data and to describe tag recaptures and resights since 1976. In addition, some results from the 1978 tagging operations which deal with the ranges of tagged dolphins and possible dolphin movements are presented and discussed.

MATERIALS AND METHODS

In 1983 a project was initiated to ensure that the data from all of the Southwest Fisheries Center dolphin tagging operations were in a form that could be easily accessed. At that time the data for the years 1969-1976 were on 3" x 5" index cards, and the data for the 1978 tagging project were recorded on magnetic tape and on original data forms. All of the data were initially recorded in scientific observers' notebooks, currently housed at National Marine Fisheries Service, SWFC, (for tags released from 1970 to 1978) and at Inter-American Tropical Tuna Commission (for tags released in 1969 and 1970 on three cruises).

The data are currently stored in a format compatible with the commercial microcomputer program, dBASE II¹ (Ratliff 1982). A microcomputer was used to enter the data from the index cards via a data-entry program of dBASE II, and the 1978 data on magnetic tape were transferred from the UCSD VAX computer via modem and BASIC computer language programs. These two sets of data were made compatible by recoding some of the entries. Data was recoded either as it was entered in the data-entry program or within BASIC or dBASE II computer programs. Existing standard codes were used where suitable (Oliver et al. manuscript).

Some of the index-card data from the 1969-1976 operations were compared against observer notes. Tagging data from the 1978 operations were not checked as extensively against field-data sheets, because the

¹Does not imply endorsement by NMFS

level of initial entry and analysis (Jennings and Stives 1979) was judged adequate.

The dolphin-tagging data now exist in three separate database files: one file contains tag releases, another tag recoveries, and the third tag resights. The structure of these files is described in Appendix A. Data editing as well as information retrieval can be accomplished by using dBASE II with either a single file (such as the release file) or by linking two or three files related by a field or fields common to the files: tag number, tag type, species, sex, age, and length. DBASE II also allows rewriting these files into "System Data Format" (standard ASCII format), so that processors other than dBASE II can access and manipulate the data.

The file RELEASE.DBF contains 4558 records; each record contains 28 elements or fields. There are 218 characters per record (142 of these are in two "note" fields). I use 30 codes for the field describing tag types (13 of these for types reported by Perrin et al. [1979] and 17 codes for other tag possibilities, including those from the 1978 dolphin-tagging operations). Each tag (except radio transmitters) possessed a number, and some of the earlier tags (IATTC) had a character preceding this number; two fields contain these data. Tag size, length or diameter, color and information on a secondary tag are recorded in six fields. Secondary tags were mainly used in 1978, when dorsal fins were notched, and on a single cruise during an earlier operation (1976), when colored braids were added to spaghetti tags. There are nine codes for tag dispositions (applied, on hand, recovered, rejected, unknown or lost, possible loss or rejection, duplicated tag existence, resighted, and "see notes"). Records of the on-hand tags are incomplete and may be added to the database later. There are six fields for date, time, latitude and longitude of release. Codes for dolphin species, sex, age or coloration groups, length, and injections for marking hard parts are placed in additional fields. Age and coloration groups are placed in the same field. (In spotted dolphins coloration is correlated with age). Other elements contain codes for vessel, cruise, purse seine set, and observers.

The dolphin tagging database files containing resights and returns are smaller than RELEASE.DBF. The file RESIGHT.DBF contains 116 records of 22 fields, and the file RETURN.DBF contains 112 records of 28 fields. There is no tag disposition element; the tags can be considered either resighted or recovered. Two fields in RETURN.DBF contain codes for specimen recovery information and reference to a life-history database. File RESIGHT.DBF contains 115 resights of the 1978 operation's tags and 1 resight of a 25-mm orange streamer tag from earlier tagging operations.

Selected fields of the 1978 release data are tabulated in Appendix B, and fields containing resight and release data are listed in Appendices C and D.

Longitudes of the resightings of the 1978 tagged dolphins were plotted against time in order to illustrate west and east movement. Resightings were compared with observer effort present in the ETP area, from the equator to 25° N and from 80° to 140° W. Effort was measured by the number of SWFC personnel-observed sets on dolphins by commercial tuna seiners. These sets, as well as resightings, were pooled over five-degree squares of latitude and longitude and over bimonthly periods. These data were also

used to test the hypothesis of onshore and offshore movements of dolphins.

RESULTS

Operations Before 1978

The results of tagging operations from 1969 to 1976 were presented by Perrin et al. (1979). However, not mentioned were 30 tags released by the crew of a private yacht, Serenity, in late 1975 and early 1976, off Panama, Galapagos Islands and Marquesas Islands. The locations and species of dolphins tagged was presented by Perrin et al. 1984. Six spotted dolphins, 9 spinner dolphins, 12 bottlenose dolphins and 3 undetermined species (most likely bottlenose dolphins) were tagged. These were spaghetti tags (Perrin's tag type 2d) and included one possible miss. None of the tags has been recovered.

No spaghetti tag or Rototag recoveries were reported after 1976. However, a resighting of an orange spaghetti tag, "attached to the dorsal fin" of a spotted or spinner dolphin at 03°58'N and 109°53'W, August 8, 1978, was reported by a crewman of a tuna purse seiner.

While entering data from index cards, in a few instances, differences between information on the index cards and in the observer notes were discovered. Although many of these data were corrected using original data forms, some in the microcomputer database remain unchecked (tag type 1, and after tag type 3 number 700).

1978 Tagging Operation

Figure 1 shows the locations of tag releases during the 1978 research cruise. There are 662 tags in the tagging database RELEASE.DBF which are coded as released from the cruise. Seven of these were recovered (3 were radio tags). Figure 2 shows the minimum distance vectors of movement based on several resightings as well as these recoveries. Only 22 of the resightings can be traced to the release point.

Resightings dominate the recovery-resighting results of the 1978 tagging operation. Figure 3 shows locations of resightings of tagged dolphins. Not shown are three unconfirmed resightings, two made soon after tag release 155° (11°18'N, 155°45'W and 02°04'N, 158°14'W) and one made January 28, 1979 (10°27'S, 088°16'W). The numbers of tagged dolphins resighted may be compared to the numbers of recoveries:

	Releases	Resights	Returns
Offshore spotted dolphins	645	95	7
Eastern spinner dolphins	16	1	
Unidentified dolphins	1	19	

Only one of the 331 dolphins that received tetracycline injections was recovered after the release cruise, but the carcass was not saved for determination of age.

DISCUSSION

The 1978 tagging was successful for the number of resights per release, and the resights can be compared to the returns per release of earlier operations. A tabulation of the numbers of tags released, recovered, and resighted illustrates the change from recoveries to resightings, 1969-1980:

	Tagged*	Recovered	Resighted
1969	165	1	
1970	789	7	
1971	190	2	
1972	391	14	
1973	259	1	
1974	1230	40	
1975	421	32	
1976	160	5	
1977			
1978	662	6	35
1979		1	71
1980			10
Unknown date		3	
Total	4267	112	116

*excluding rejections, possible misses, etc.

The number of resights can be attributed to the new tag design. Design of the dorsal-fin disk tags for resightability was a logical step in tag evolution. Estimates of dolphins killed incidentally in tuna purse seine fishing declined from 1973 to 1978 by a factor of 10 as the result of improvements in fishing gear and methods and changes in management practices beginning in 1976 (Coe et al. 1984, Wahlen manuscript). Reduced dolphin mortality meant fewer recoveries of tagged dolphins, which gave impetus to the new design to enhance resightability. A precursor to the 1978 tags, in terms of added visibility, was the braided spaghetti tag released in 1976. The newer disk tags were bright orange or yellow and were large compared with the earlier spaghetti tags and Rototags.

Although the disk tags were highly visible, the tag identification numbers were small and difficult to distinguish. Only 22 of the resights could be traced to their origin, and these could only be traced by the notch codes on dorsal fins. Large black T's and squares placed on the tags indicated animals which either received tetracycline injections or did not and, in contrast to the tag numbers, were very distinguishable.

Figure 3 shows a general east-west spread of resightings of dolphins tagged in 1978, which is consistent with the hypothesis of Perrin et al. (1979) that dolphins migrate westward in the late spring and summer.

The two westernmost resights seen in Figure 3 are unconfirmed. Films of the animals sighted were inspected, but the reported tags could not be seen. It is unlikely that the animals could have traveled the 137-182 nautical miles per day implied by the distances and times involved. It is possible that the observer (a yachtsman) saw circular wounds made by the "cookie-cutter" shark, Isistius brasiliensis (Jones 1971).

There are eight confirmed resights west of 115° W, all made from May to August. Only two tag returns occurred after the tagging cruise, one within a month and the other one year later in the same general area within 4° of latitude and longitude. This is consistent with Perrin's 1979 suggestion that the home ranges are on the order of 300 nautical miles.

Figure 4 illustrates the longitudes of resightings over the period from the October 1978 tag releases until May 1980. Superimposed across the graph is the range of release points. This figure seems to indicate a spring-summer westward drift of dolphins in 1979 and an eastward movement in late winter 1980. The two unconfirmed sightings from the private yacht are extreme outliers.

To determine whether or not this possible migratory pattern could be explained by the distribution of tuna fishing, resightings were compared with the numbers of sets involving dolphins that were observed in each area (Table 1). The data are aggregated in bimonthly periods and five degree squares of latitude and longitude. The table indicates that effort was westernmost from late spring to fall and easternmost in winter months, the pattern that the resightings seem to follow. However, the change in resighting pattern between months 11-12, 1979 and months 1-2, 1980 seems to indicate onshore dolphin movement which cannot be explained by the changes in effort.

Table 1 seems to indicate that dolphin movements are more complicated than the east-west migration proposed by Perrin. Unfortunately, much resolution of actual dolphin movement is lost because most resightings from the 1978 releases cannot be linked to discrete release points but only to the broad area of release. Another confounding factor is that there was a group of inshore releases (sets 2 and 4) and an offshore group (sets 7, 8, 11, 12, 13, 15 and 16). One might expect to see different behavior in the dolphins of different areas.

Data displayed in Table 1 are not inconsistent with seasonal movement. Resightings in October 1978 were sighted by the tagging cruise itself. In the following bimonthly period, November-December 1978, as seen in Table 1, there was a resighting south of the release area as well as several in the tagging area. This southern resighting represents an offshore movement from the tagging area and may indicate that in early winter, dolphins (perhaps those of the offshore group) are far ranging. There are resightings inshore during the January-February bimonthly period, but not during March-April. Resightings seem to indicate that there is an offshore movement in the next bimonthly period, June-July 1979. This can be implied from the change of the pattern of resightings from March-April to May-June 1979 (Table 1). Resightings occurred far offshore in May-June, consistent with Perrin's migration hypothesis, which expects offshore movement in this period (May-June). The wide spread of resights during May-June 1979 and the July-August may have been due to different habits of different dolphin herds. In September-October 1979, there were few far-offshore sightings with some effort present offshore, while the next two periods show more inshore sightings, which is consistent with the hypothesis that spotted dolphins move inshore in winter. The lack of many sightings in November-December 1979 could be explained by the paucity of effort or that dolphins

had yet to move onshore. During January-February 1980, tags were resighted in the area of initial releases, perhaps due to increased effort there, but consistent with the hypothesized winter movement towards the inshore regions.

Thus, the observations shown in Table 1 are consistent with this scenario of spotted dolphin movement: Fall-- moving in the offshore region. Early winter-- still offshore but starting to move inshore. Winter, early spring-- inshore. Late spring, early summer-- moving offshore. Summer-- offshore. The extent of movement and home range could be dependent upon an animal attribute such as genetic predisposition or herding behavior and/or environmental conditions. There is latitudinal movement as well as longitudinal (east-west) movement, as indicated in Table 1. This may be related to the orientation of the coastline and other environmental factors. The hypothesis of seasonal movement (Perrin et al. 1979) is not unreasonable. Therefore, migratory behavior must be considered when analyzing dolphin movements and ranges.

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Table 1. (continued).

[illegible]

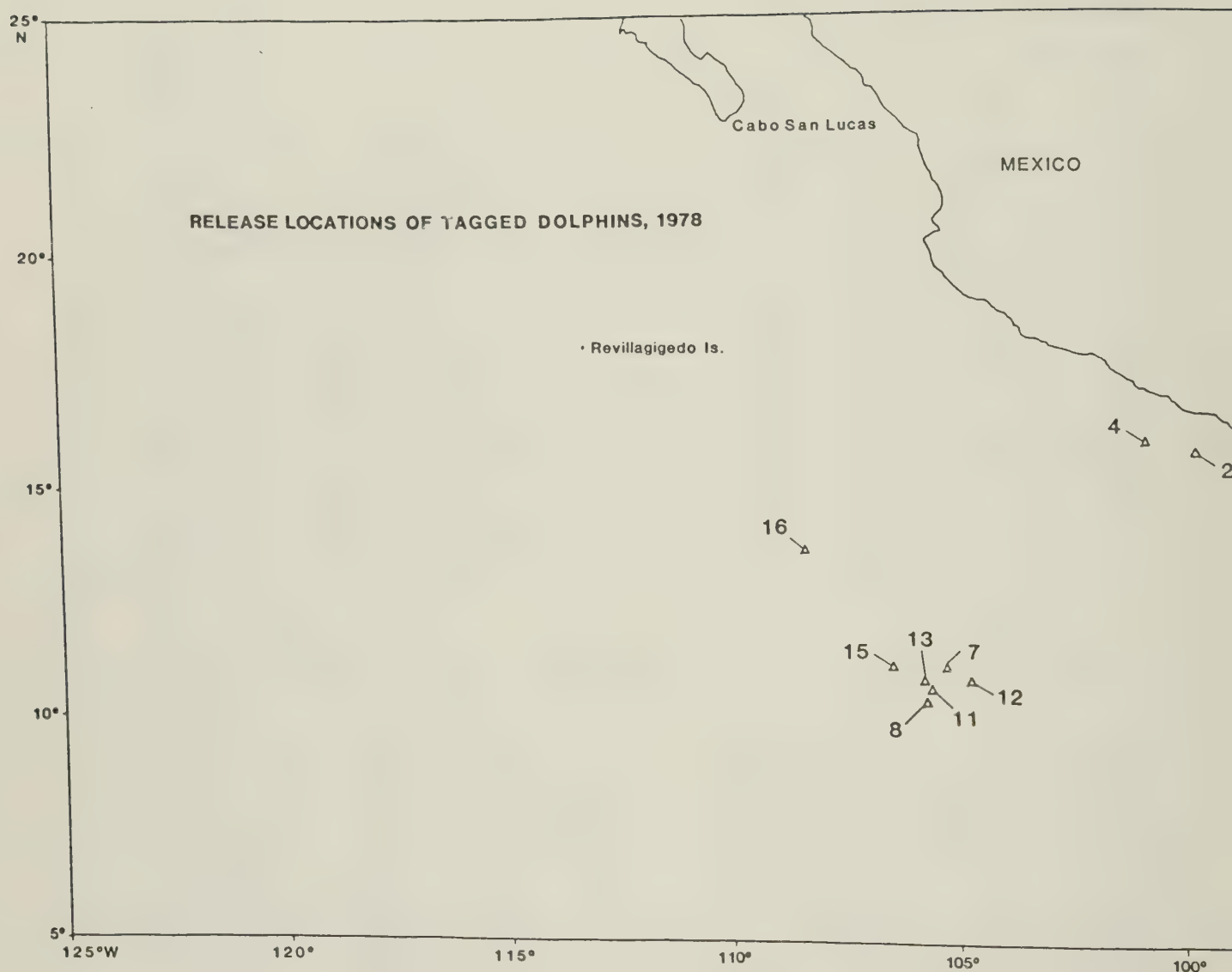


Figure 1. Set locations of tagged dolphin releases during September 12 to October 31, 1978 research cruise of the tuna purse seiner, Queen Mary. Locations, dates, and number of tags released are:

SET	TTYPE	SDTTYPE	DATE	LAT	LONG	Numbers Released	Radio transmitters
2	11	20	09/29/78	1548	09935	44	
4	13	24	10/03/78	1603	10042	52	2
7	12	23	10/07/78	1108	10511	131	1
8	11	20	10/08/78	1022	10537	131	
11	12	22	10/11/78	1039	10531	101	2
12	13	21	10/13/78	1050	10439	41	1
13	11	20	10/15/78	1051	10541	50	
15	11	20	10/23/78	1110	10622	64	
16	11	20	10/24/78	1344	10816	42	

(Refer to Appendix A for code explanations).

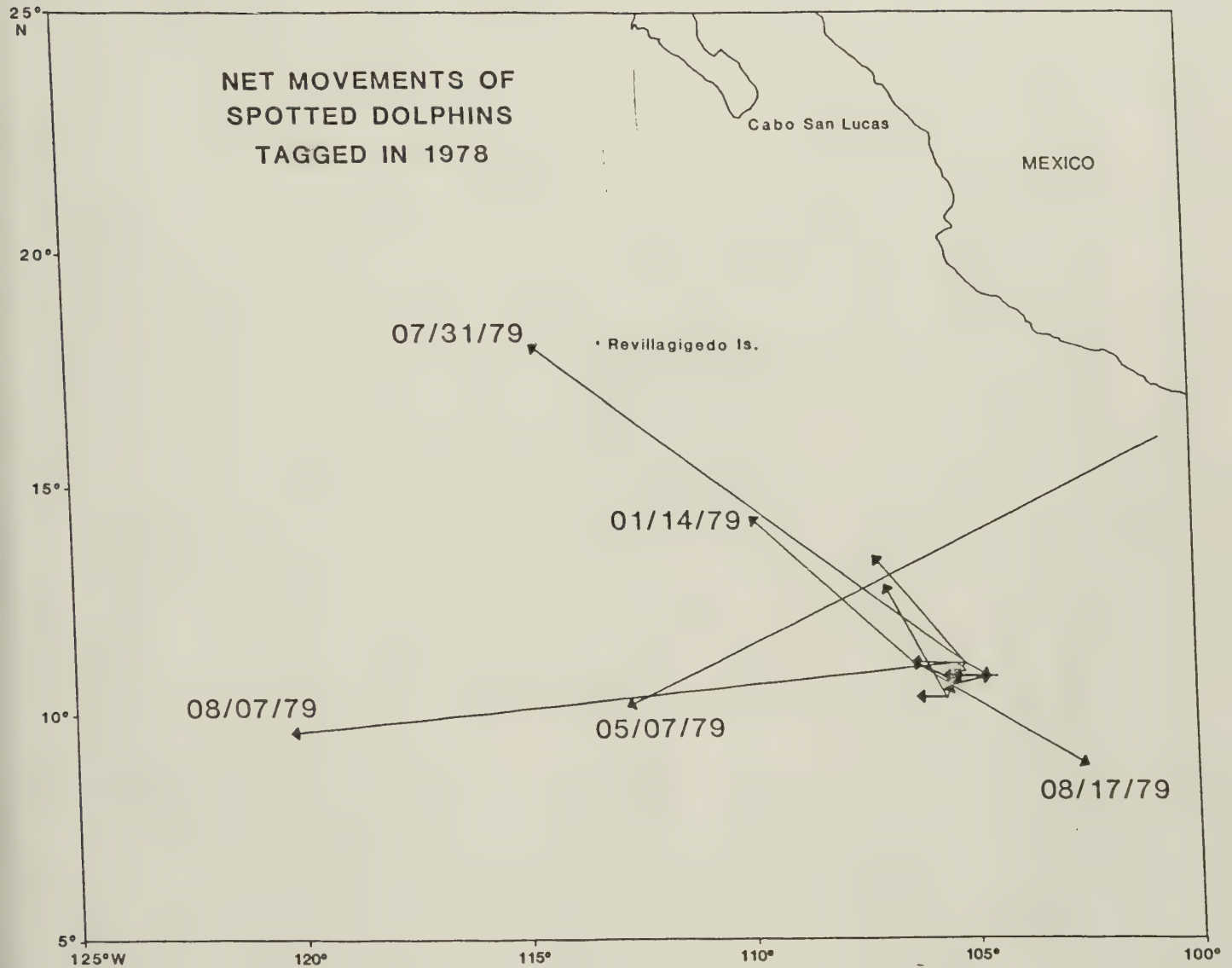


Figure 2. Vectors of minimum distance movement of spotted dolphins tagged in 1978, from release point to recovery or resighting point. Shown here are data based on 22 resightings, 4 disk-tag recoveries and 3 radio-transmitter recoveries.

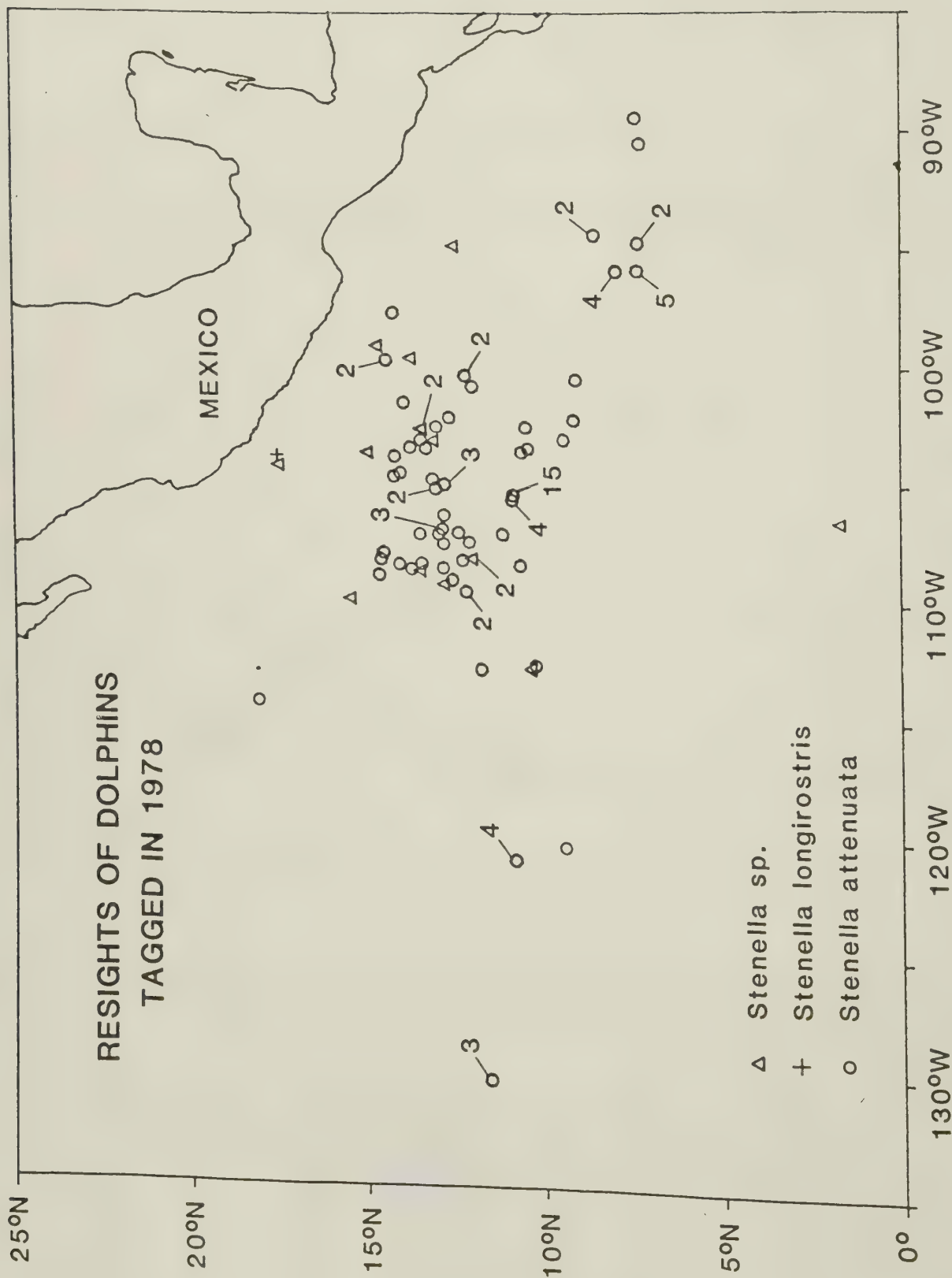


Figure 3. Locations of resightings of dolphins tagged in 1978. Not shown are three unconfirmed sightings (2 made soon after release, west of 155°, and one made 01/28/79 at 10°27'S and 088°16'W). A single resighting was made of an eastern spinner dolphin near the coast of Mexico. Otherwise sightings were of spotted dolphins or were not specified as to species.

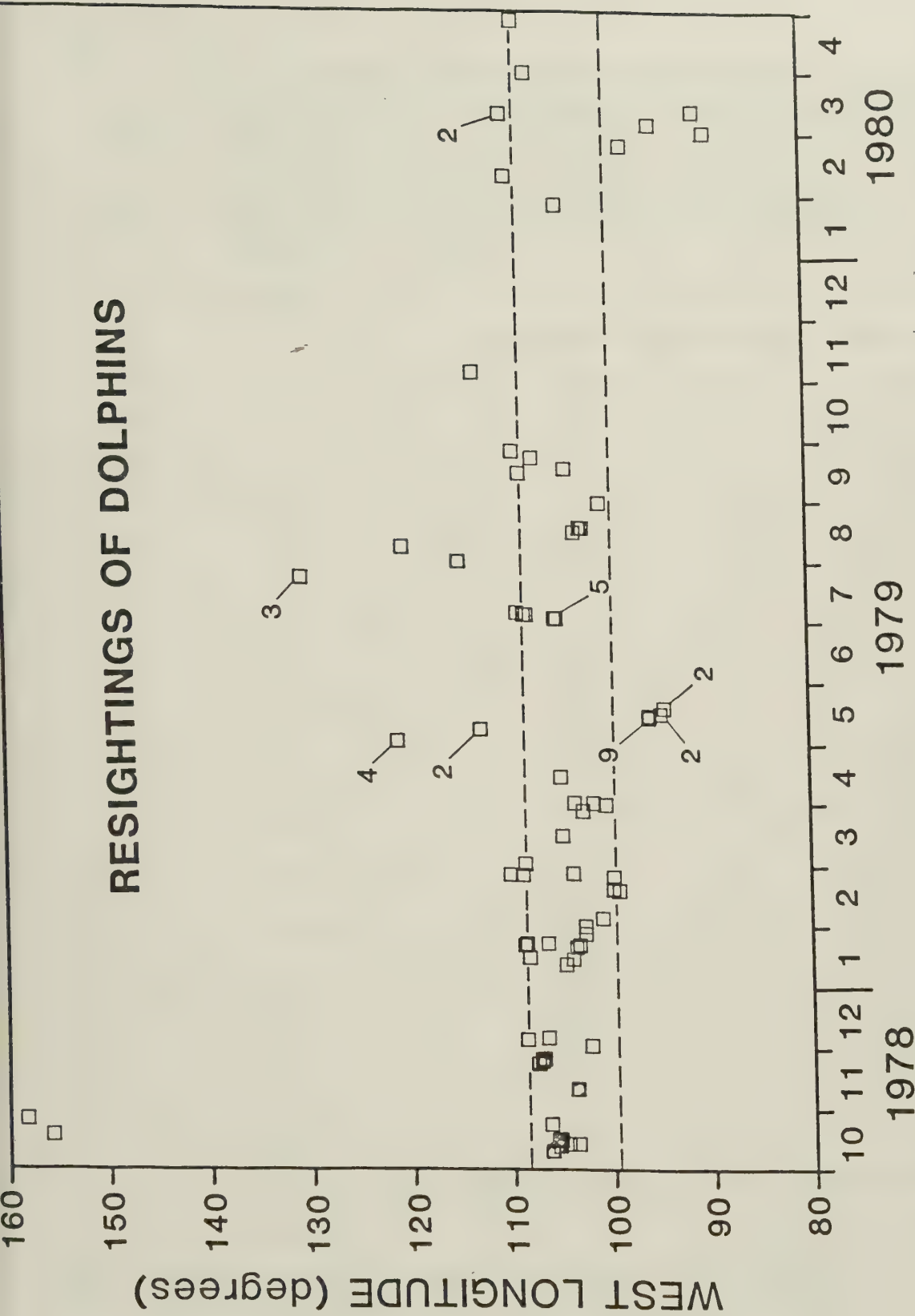


Figure 4. Longitudes of tagged dolphin resightings over the time, from October 1978 to May 1980. The two westernmost resightings were made by a Canadian yachtsman and are unconfirmed. Not shown is an unconfirmed sighting made 01/28/79 at $10^{\circ}27'S$ and $088^{\circ}16'W$. Inner lines across the plot represent the range of longitudes of the release points in the tagging operation.

Appendix A.

The formats of the three files (RELEASE.DBF, RESIGHT.DBF, and RETURN.DBF) in the dolphin-tagging database at the Southwest Fisheries Center. For each of the three files, the data element FIELD number, NAME, TYPE (N=numeric, C=character) and WIDTH (number of characters) are listed first. Then each data element is defined and coding conventions are listed. Many of the fields are duplicated between the three files so that they may be keyed together, and descriptions are not repeated where these fields are identical.

(1) Tag Releases. Database name: RELEASE.DBF

FIELD	NAME	TYPE	WIDTH
001	TTYPE	N	002
002	CH	C	002
003	NUM	N	005
004	TSIZE	N	002
005	TCOLOR	C	004
006	TDISPO	N	001
007	SDTTYPE	N	002
008	SDTSIZE	N	002
009	SDTCOLOR	C	004
010	DATE	C	008
011	TIME	C	004
012	LAT	C	004
013	NS	C	001
014	LONG	C	005
015	EW	C	001
016	SPECIES	N	002
017	SEX	C	001
018	COLOR	C	001
019	LENGTH	N	004
020	INJECT	C	001
021	INJAMT	N	002
022	VESSEL	N	004
023	CRUISE	N	004
024	SET	N	003
025	OBSER	N	003
026	OBS2	N	003
027	NOTE1	C	071
028	NOTE2	C	071

(1.1) Description of fields in database RELEASE.DBF

001	TTYPE	tag type
	0	unknown
	1	spaghetti with plastic dart; IATTC; yellow; 23 cm
	2	spaghetti with plastic dart; BCF; yellow; 23 cm
	3	spaghetti with steel dart; clear plastic sleeve; BCF; orange; 15 cm
	4	spaghetti with steel dart; clear plastic sleeve; NMFS; yellow; 12 cm

Appendix A (continued).

5	spaghetti with steel dart; clear plastic sleeve; NUC; yellow; 32 cm
6	unknown spaghetti tag
7	spaghetti with steel dart; NMFS; orange; 25 cm
8	spaghetti with steel dart; NMFS; with colored braid
9	Rototag; BCF; yellow
10	Rototag; no legend; white
11	orange T-disk
12	orange []-disk
13	yellow []-disk
14	unknown orange T-disk
15	unknown orange []-disk
16	unknown yellow []-disk
17	orange unidentified disk
18	unidentified disk
19	unknown Rototag
20	double notch base of fin
21	double notch middle of fin
22	single notch base of fin
23	single notch middle of fin
24	single notch top of fin
25	unknown double notch
26	unknown single notch
27	unknown notch
29	radio beacon
30	same as 3 but with brass keeper
002	CH alphabetic character, if present, in tag code; left justified
003	NUM number on tag
004	TSIZE length of tag in cm
005	TCOLOR tag color; sometimes combined (e.g. 26= red & blue)
	0 black
	1 brown
	2 red
	3 orange
	4 yellow
	5 green
	6 blue
	7 violet
	8 gray
	9 white
006	TDISPO tag disposition
	1 applied
	2 on hand
	3 recovered
	4 rejected

Appendix A (continued).

5	unknown or lost	
6	see notes	
7	possible rejection or loss; see notes	
8	duplicate tag exists; both applied	
9	resighted	
007	SDTTYE	second tag type
	Codes are the same as those of TTYPE.	
008	SDTSIZE	second tag length in cm
009	SDTCOLOR	second tag color
	Codes are the same as those of TCOLOR.	
010	DATE	date of release
	Format is MO/DA/YR month,day,year	
011	TIME	time of release, local time 0000 to 2400
012	LAT	latitude of release, degrees and minutes
013	NS	north or south latitude
	1	north
	2	south
014	LONG	longitude of release, degrees and minutes
015	EW	east or west longitude
	1	east
	2	west
016	SPECIES	dolphin (or other) species
	Refer to NMFS code table plus...	
	99	see notes
017	SEX	sex of animal tagged
	1	male
	2	female
	3	unknown
	blank	unknown
018	COLOR	color- age group of tagged animal
		<u>spotted dolphin</u> <u>other species</u>
	1	neonate -----
	2	two-toned -----
	3	speckled -----
	4	mottled or (mottled or adult) juvenile or subadult
	5	fused adult -----
	6	other species (Jennings database) adult
	9	see notes same
		same

Appendix A (continued).

-
- 019 LENGTH length in mm
- 020 INJECT injection type
 1 lead acetate
 2 tetracycline
 blank none
- 021 INJAMT amount of injection in cc
 This will be recorded as 0 for lead acetate.
- 022 VESSEL vessel used in tagging operation
 Refer to NMFS code table plus...
 9999 see notes
- 023 CRUISE cruise code of vessel trip
 Refer to NMFS code table, except early IATTC cruises were given
 a number possibly duplicated by NMFS table, these used tag types 1
 and 2.
- 024 SET tuna set number during cruise
- 025 OBSER code of shipboard observer or person applying tag
 Refer to NMFS code table plus...
 999 see notes
- 026 OBS2 code of additional shipboard observer
 Refer to NMFS code table.
- 027 NOTE1 notes
- 028 NOTE2 additional space for notes

(2) Tag Resights. Database name: RESIGHT.DBF

FIELD	NAME	TYPE	WIDTH
001	TTYPE	N	002
002	NUM	N	005
003	TSIZE	N	002
004	TCOLOR	C	004
005	SDTTYPE	N	002
006	DATE	C	008
007	TIME	C	004
008	LAT	C	004
009	NS	C	001
010	LONG	C	005
011	EW	C	001
012	SPECIES	N	002
013	SEX	C	001
014	COLOR	C	001
015	LENGTH	N	004
016	VESSEL	N	004

Appendix A (continued).

017	CRUISE	N	004
018	SET	N	003
019	OBSER	N	003
020	OBS2	N	003
021	NOTE1	C	071
022	NOTE2	C	071

(2.1) Description of fields in database RESIGHT.DBF

001	TTYPE	tag type
002	NUM	number on tag
003	TSIZE	length of tag in cm
004	TCOLOR	tag color
005	SDTTYPE	second tag type
006	DATE	date of resight
007	TIME	time of resight, local time 0000 to 2400
008	LAT	latitude of resight, degrees and minutes
009	NS	north or south latitude
010	LONG	longitude of resight, degrees and minutes
011	EW	east or west longitude
012	SPECIES	dolphin (or other) species
013	SEX	sex of animal tagged
014	COLOR	color- age group of tagged animal
015	LENGTH	length in mm
016	VESSEL	vessel code
017	CRUISE	cruise code of vessel trip
018	SET	tuna set number during cruise
019	OBSER	code of shipboard observer recovering tag
020	OBS2	code of additional shipboard observer
021	NOTE1	notes
022	NOTE2	additional space for notes

Appendix A (continued).

(3) Tag Returns. Database name: RETURN.DBF

FIELD	NAME	TYPE	WIDTH
001	TTYPE	N	002
002	CH	C	002
003	NUM	N	005
004	TSIZE	N	002
005	TCOLOR	C	004
006	SDTTYPE	N	002
007	SDTSIZE	N	002
008	SDTCOLOR	C	004
009	RECOVER	C	003
010	SPCMN	C	006
011	DATE	C	008
012	TIME	C	004
013	LAT	C	004
014	NS	C	001
015	LONG	C	005
016	EW	C	001
017	SPECIES	N	002
018	SEX	C	001
019	COLOR	C	001
020	LENGTH	N	004
021	VESSEL	N	004
022	CRUISE	N	004
023	SET	N	003
024	OBSER	N	003
025	OBS2	N	003
026	NOTE1	C	071
027	NOTE2	C	071

(3.1) Description of fields in database RETURN.DBF

001	TTYPE	tag type
002	CH	alphabetic character, if present, in tag code; left justified
003	NUM	number on tag
004	TSIZE	length of tag in cm
005	TCOLOR	tag color
006	SDTTYPE	second tag type
007	SDTSIZE	second tag length in cm
008	SDTCOLOR	second tag color

Appendix A (continued).

009	RECOVER	specimen recovery
	C	carcass
	H	head
	F	fin
	999	see notes
010	SPCMN	six space alphanumeric linking specimen with life history database, format AAANNN
	Plus...	
	999999	see notes
011	DATE	date of recovery
012	TIME	time of recovery, local time 0000 to 2400
013	LAT	latitude of recovery, degrees and minutes
014	NS	north or south latitude
015	LONG	longitude of recovery, degrees and minutes
016	EW	east or west longitude
017	SPECIES	dolphin (or other) species
018	SEX	sex of animal tagged
019	COLOR	color- age group of tagged animal
020	LENGTH	length in mm
021	VESSEL	vessel code
022	CRUISE	cruise code of vessel trip
023	SET	tuna set number during cruise
025	OBSER	code of shipboard observer recovering tag
026	OBS2	code of additional shipboard observer
027	NOTE1	notes
028	NOTE2	additional space for notes

Appendix B. Selected fields from part of the database, RELEASE.DBF, containing records of the 1978 dolphin tagging operations in the eastern tropical Pacific. The data fields are explained in Appendix A. Latitude and longitude are north and west. Species codes are NMFS, SWFC codes. Injection amounts are of tetracycline.

TTYPE	NUM	TDISPO	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
11	8	1	20	10/24/78	1344	10816	2	2	5	1940	20
11	9	1	20	10/24/78	1344	10816	2	1	3	1620	20
11	10	1	20	10/24/78	1344	10816	2	2	5	1720	20
11	14	1	20	10/24/78	1344	10816	2	1	3	1620	20
11	15	1	20	10/24/78	1344	10816	2	2	5	1880	20
11	18	1	20	10/24/78	1344	10816	2	2	3	1730	20
11	19	1	20	10/24/78	1344	10816	2	2	5	1850	20
11	22	1	20	10/24/78	1344	10816	2	2	5	1860	20
11	25	1	20	10/24/78	1344	10816	2	2	5	1850	20
11	26	1	20	10/24/78	1344	10816	2	2	3	1620	20
11	30	1	20	10/24/78	1344	10816	2	1	4	1730	20
11	31	1	20	10/24/78	1344	10816	2	1	5	1720	20
11	34	1	20	10/24/78	1344	10816	2	2	3	1470	15
11	35	1	20	10/24/78	1344	10816	2	2	3	1770	20
11	37	1	20	10/24/78	1344	10816	2	2	3	1770	20
11	39	1	20	10/24/78	1344	10816	2	1	4	1840	20
11	40	1	20	10/24/78	1344	10816	2	2	3	1750	20
11	42	1	20	10/24/78	1344	10816	2	2	5	1890	20
11	43	1	20	10/24/78	1344	10816	2	1	5	2030	20
11	46	1	20	10/24/78	1344	10816	2	2	5	1900	20
11	51	1	20	10/24/78	1344	10816	2	1	5	2120	25
11	52	1	20	10/24/78	1344	10816	2	1	5	1910	20
11	67	1	20	10/24/78	1344	10816	2	1	5	1810	20
11	73	1	20	10/24/78	1344	10816	2	2	4	1900	20
11	86	1	20	10/23/78	1110	10622	2	1	5	2060	20
11	87	1	20	10/23/78	1110	10622	2	1	5	2090	20
11	101	1	20	10/23/78	1110	10622	2	1	4	1750	20
11	103	1	20	10/23/78	1110	10622	2	2	5	1840	20
11	104	1	20	10/23/78	1110	10622	2	1	5	2090	25
11	105	1	20	10/23/78	1110	10622	2	2	5	1870	20
11	106	1	20	10/23/78	1110	10622	2	1	5	1970	20
11	107	1	20	10/23/78	1110	10622	2	1	3	1560	20
11	108	1	20	10/23/78	1110	10622	2	2	5	1860	20
11	109	1	20	10/23/78	1110	10622	2	2	4	1740	20
11	110	1	20	10/23/78	1110	10622	2	1	5	1980	20
11	111	1	20	10/23/78	1110	10622	2	2	4	1830	20
11	112	1	20	10/23/78	1110	10622	2	1	5	2000	20
11	115	1	20	10/23/78	1110	10622	2	1	4	1680	20
11	116	1	20	10/23/78	1110	10622	2	1	5	2070	25
11	117	1	20	10/23/78	1110	10622	2	1	3	1530	15
11	118	1	20	10/23/78	1110	10622	2	1	5	1980	20
11	119	1	20	10/23/78	1110	10622	2	2	4	1740	20
11	122	1	20	10/23/78	1110	10622	2	2	5	1860	20
11	125	1	20	10/23/78	1110	10622	2	1	3	1660	20

Appendix B (continued).

TTYPE	NUM	TDISPO	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
11	130	1	20	10/23/78	1110	10622	2	2	5	1750	20
11	132	1	20	10/23/78	1110	10622	2	1	3	1600	20
11	137	1	20	10/23/78	1110	10622	2	2	5	1850	20
11	138	1	20	10/23/78	1110	10622	2	2	5	1970	20
11	143	1	20	10/23/78	1110	10622	2	2	3	1600	20
11	144	1	20	10/23/78	1110	10622	2	2	5	1800	20
11	146	1	20	10/23/78	1110	10622	2	1	3	1650	20
11	147	1	20	10/23/78	1110	10622	2	1	3	1620	20
11	148	1	20	10/23/78	1110	10622	2	1	5	1890	20
11	149	1	20	10/23/78	1110	10622	2	2	5	1730	20
11	151	1	20	10/23/78	1110	10622	2	1	2	1290	10
11	152	1	20	10/23/78	1110	10622	2	2	5	1770	20
11	153	1	20	10/23/78	1110	10622	2	2	5	1850	20
11	154	1	20	10/23/78	1110	10622	2	1	3	1680	20
11	156	1	20	10/23/78	1110	10622	2	1	5	1880	20
11	158	1	20	10/23/78	1110	10622	2	2	5	1900	20
11	159	1	20	10/23/78	1110	10622	2	2	5	1880	20
11	161	1	20	10/23/78	1110	10622	2	1	4	1710	20
11	162	1	20	10/23/78	1110	10622	2	2	3	1720	20
11	164	1	20	10/23/78	1110	10622	2	1	5	1970	20
11	170	1	20	10/23/78	1110	10622	2	2	5	1890	20
11	171	1	20	10/23/78	1110	10622	2	2	5	1770	20
11	175	1	20	10/23/78	1110	10622	2	2	3	1780	20
11	176	1	20	10/23/78	1110	10622	2	2	5	1860	20
11	178	1	20	10/23/78	1110	10622	2	2	5	1880	20
11	179	1	20	10/23/78	1110	10622	2	2	4	1760	20
11	181	1	20	10/23/78	1110	10622	2	2	5	1940	20
11	183	1	20	10/23/78	1110	10622	2	1	4	1780	20
11	184	1	20	10/23/78	1110	10622	2	1	4	1710	15
11	185	1	20	10/24/78	1344	10816	2	1	4	1610	20
11	186	1	20	10/24/78	1344	10816	2	1	5	1950	20
11	187	1	20	10/15/78	1051	10541	2	2	2	1560	15
11	188	1	20	10/15/78	1051	10541	2	2	5	1900	20
11	189	1	20	10/15/78	1051	10541	2	2	4	1640	20
11	190	1	20	10/24/78	1344	10816	2	1	3	1720	20
11	191	1	20	10/23/78	1110	10622	2	2	2	1540	15
11	193	1	20	10/24/78	1344	10816	2	1	5	1980	20
11	194	1	20	10/24/78	1344	10816	2	1	5	2020	20
11	195	9	20	10/15/78	1051	10541	2	1	5	1780	20
11	196	1	20	10/23/78	1110	10622	2	1	5	1920	20
11	197	1	20	10/23/78	1110	10622	2	2	5	1860	20
11	198	1	20	10/15/78	1051	10541	2	2	5	1850	20
11	200	1	20	10/24/78	1344	10816	2	1	5	2010	20
11	202	1	20	10/15/78	1051	10541	2	2	3	1600	15
11	203	1	20	10/24/78	1344	10816	2	1	5	1920	20
11	204	1	20	10/15/78	1051	10541	2	2	3	1660	20
11	209	1	20	10/24/78	1344	10816	2	1	5	1870	20
11	210	1	20	10/24/78	1344	10816	2	1	2	1560	15
11	211	1	20	10/23/78	1110	10622	2	1	2	1440	15

Appendix B (continued).

TTYPE	NUM	TDISPO	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
11	212	1	20	10/15/78	1051	10541	2	1	5	2000	20
11	213	1	20	10/23/78	1110	10622	2	1	5	1930	20
11	215	1	20	10/24/78	1344	10816	2	1	5	1980	20
11	216	1	20	10/24/78	1344	10816	2	1	5	1830	20
11	220	1	20	10/24/78	1344	10816	2	1	4	1780	20
11	221	1	20	10/24/78	1344	10816	2	1	4	1730	20
11	223	1	20	10/24/78	1344	10816	2	1	5	1870	20
11	224	1	20	10/24/78	1344	10816	2	1	3	1710	20
11	225	1	20	10/24/78	1344	10816	2	1	2	1510	15
11	226	1	20	10/15/78	1051	10541	2	1	5	2050	25
11	227	1	20	10/24/78	1344	10816	2	2	5	1930	20
11	228	1	20	10/23/78	1110	10622	2	2	3	1700	20
11	230	1	20	10/15/78	1051	10541	2	1	5	2000	25
11	231	1	20	10/15/78	1051	10541	2	1	5	2200	25
11	232	1	20	10/15/78	1051	10541	2	1	4	1610	20
11	233	1	20	10/15/78	1051	10541	2	1	5	2050	25
11	234	1	20	10/15/78	1051	10541	2	1	5	1930	20
11	235	1	20	10/15/78	1051	10541	2	1	5	1980	20
11	236	9	20	10/15/78	1051	10541	2	1	4	1820	20
11	237	1	20	10/23/78	1110	10622	2	1	4	1790	20
11	238	1	20	10/15/78	1051	10541	2	1	5	1940	20
11	241	1	20	10/15/78	1051	10541	2	1	5	1930	20
11	242	1	20	10/15/78	1051	10541	2	2	5	1850	20
11	243	1	20	10/15/78	1051	10541	2	1	4	1700	20
11	244	1	20	10/15/78	1051	10541	2	1	5	2080	20
11	245	1	20	10/15/78	1051	10541	2	2	3	1540	20
11	246	1	20	10/15/78	1051	10541	2	1	5	1920	20
11	247	1	20	10/15/78	1051	10541	2	1	3	1590	20
11	248	1	20	10/15/78	1051	10541	2	1	5	1730	20
11	249	1	20	10/15/78	1051	10541	2	1	4	1610	20
11	250	1	20	10/15/78	1051	10541	2	2	4	1650	20
11	251	1	20	10/15/78	1051	10541	2	1	5	2000	20
11	252	1	20	10/15/78	1051	10541	2	1	3	1590	20
11	253	3	20	10/23/78	1110	10622	2	2	5	1930	20
11	254	1	20	10/15/78	1051	10541	2	1	5	1920	20
11	255	1	20	10/15/78	1051	10541	2	1	3	1680	20
11	256	1	20	10/15/78	1051	10541	2	1	5	1870	20
11	257	1	20	10/15/78	1051	10541	2	2	5	1940	25
11	258	1	20	10/23/78	1110	10622	2	1	5	1790	20
11	259	1	20	10/15/78	1051	10541	2	1	5	2050	20
11	260	1	20	10/15/78	1051	10541	2	1	3	1660	20
11	261	1	20	10/15/78	1051	10541	2	1	5	1920	20
11	263	1	20	10/15/78	1051	10541	2	1	3	1730	20
11	264	1	20	10/23/78	1110	10622	2	2	5	1970	20
11	265	1	20	10/15/78	1051	10541	2	1	3	1630	20
11	267	1	20	10/15/78	1051	10541	2	1	5	2000	20
11	268	1	20	10/23/78	1110	10622	2	1	5	1920	20
11	269	1	20	10/15/78	1051	10541	2	1	5	1950	20
11	270	1	20	10/15/78	1051	10541	2	1	5	1920	20

Appendix B (continued).

TTY	NUM	TDISPO	SDTTY	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
11	271	1	20	10/15/78	1051	10541	2	1	5	1990	20
11	272	1	20	10/23/78	1110	10622	2	2	5	1810	20
11	273	1	20	10/08/78	1022	10537	2	2	5	1870	20
11	274	1	20	10/08/78	1022	10537	2	2	5	1970	20
11	275	1	20	10/08/78	1022	10537	2	2	5	1800	20
11	280	1	20	10/08/78	1022	10537	2	2	5	1910	20
11	282	1	20	10/08/78	1022	10537	2	2	5	1820	20
11	283	1	20	10/08/78	1022	10537	2	2	5	1920	20
11	284	1	20	10/23/78	1110	10622	2	1	3	1750	20
11	285	1	20	10/23/78	1110	10622	2	1	4	1700	20
11	286	1	20	10/23/78	1110	10622	2	2	5	1850	20
11	289	1	20	10/15/78	1051	10541	2	1	5	1950	20
11	290	1	20	10/08/78	1022	10537	2	1	3	1670	20
11	291	1	20	10/08/78	1022	10537	2	2	5	1960	20
11	293	1	20	10/08/78	1022	10537	2	1	5	1770	20
11	295	1	20	10/15/78	1051	10541	2	1	3	1650	20
11	296	1	20	10/15/78	1051	10541	2	1	5	1960	20
11	297	1	20	10/15/78	1051	10541	2	1	5	2050	20
11	298	1	20	10/15/78	1051	10541	2	1	3	1740	20
11	301	1	20	10/08/78	1022	10537	2	2	5	1930	20
11	302	1	20	10/08/78	1022	10537	2	1	2	1310	10
11	303	1	20	10/08/78	1022	10537	2	2	5	1930	20
11	305	1	20	10/15/78	1051	10541	2	1	5	1850	20
11	306	1	20	10/24/78	1344	10816	2	2	3	1670	20
11	310	1	20	10/15/78	1051	10541	2	2	5	1900	20
11	312	1	20	10/08/78	1022	10537	2	2	2	1470	15
11	313	1	20	10/15/78	1051	10541	2	2	5	1800	20
11	314	1	20	10/08/78	1022	10537	2	1	5	1750	20
11	315	1	20	10/08/78	1022	10537	2	2	5	1850	20
11	316	1	20	10/08/78	1022	10537	2	2	5	1950	20
11	317	1	20	10/08/78	1022	10537	2	1	5	2120	20
11	318	1	20	10/08/78	1022	10537	2	2	5	1950	20
11	319	1	20	10/08/78	1022	10537	2	1	5	2000	25
11	320	1	20	10/08/78	1022	10537	2	2	5	1960	20
11	321	1	20	10/08/78	1022	10537	2	2	2	1480	15
11	322	1	20	10/08/78	1022	10537	2	1	4	1850	20
11	323	1	20	10/08/78	1022	10537	2	2	4	1740	20
11	324	1	20	10/08/78	1022	10537	2	1	5	2060	20
11	326	1	20	10/08/78	1022	10537	2	2	5	1890	20
11	327	1	20	10/08/78	1022	10537	2	1	5	2150	25
11	330	1	20	10/08/78	1022	10537	2	1	5	2090	25
11	331	1	20	10/08/78	1022	10537	2	2	5	1890	20
11	332	1	20	10/08/78	1022	10537	2	2	5	1950	20
11	333	1	20	10/08/78	1022	10537	2	2	2	1550	15
11	334	1	20	10/08/78	1022	10537	2	2	5	1910	20
11	335	1	20	10/08/78	1022	10537	2	1	5	1940	20
11	336	1	20	10/08/78	1022	10537	2	2	4	1700	20
11	337	1	20	10/08/78	1022	10537	2	2	5	1940	20
11	338	1	20	10/08/78	1022	10537	2	1	2	1450	15

Appendix B (continued).

TTYPE	NUM	TDISPO	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
11	339	1	20	10/08/78	1022	10537	2	1	5	2120	25
11	340	1	20	10/08/78	1022	10537	2	2	5	1880	15
11	341	1	20	10/08/78	1022	10537	2	2	5	1930	20
11	342	1	20	10/08/78	1022	10537	2	2	3	1680	20
11	343	1	20	10/08/78	1022	10537	2	2	3	1720	20
11	344	1	20	10/08/78	1022	10537	2	2	5	1800	20
11	345	1	20	10/08/78	1022	10537	2	2	5	1960	20
11	346	9	20	10/08/78	1022	10537	2	1	5	1950	20
11	347	1	20	10/08/78	1022	10537	2	2	5	1920	20
11	348	1	20	10/08/78	1022	10537	2	2	3	1450	15
11	349	1	20	10/08/78	1022	10537	2	1	5	1900	20
11	350	1	20	10/08/78	1022	10537	2	2	5	1900	20
11	352	1	20	10/08/78	1022	10537	2	1	3	1650	15
11	353	9	20	10/08/78	1022	10537	2	2	3	1570	20
11	354	1	20	10/08/78	1022	10537	2	2	2	1380	15
11	355	1	20	09/29/78	1548	09935	2	1	3	1600	15
11	356	1	20	10/08/78	1022	10537	2	2	5	1950	20
11	357	1	20	10/08/78	1022	10537	2	1	5	1950	20
11	358	1	20	10/08/78	1022	10537	2	2	5	1890	20
11	359	1	20	10/08/78	1022	10537	2	1	5	2120	25
11	360	1	20	10/08/78	1022	10537	2	2	5	1870	20
11	361	1	20	10/08/78	1022	10537	2	1	5	2070	20
11	362	1	20	10/08/78	1022	10537	2	2	3	1640	20
11	363	1	20	10/08/78	1022	10537	2	2	5	1900	20
11	364	1	20	09/29/78	1548	09935	2	2	3	1750	18
11	365	1	20	09/29/78	1548	09935	2	1	5	2000	20
11	366	1	20	10/08/78	1022	10537	2	2	5	1920	20
11	367	1	20	10/08/78	1022	10537	2	2	5	1830	20
11	368	1	20	10/08/78	1022	10537	2	2	5	1890	20
11	369	1	20	10/08/78	1022	10537	2	2	5	1730	20
11	370	1	20	10/08/78	1022	10537	2	2	2	1570	12
11	371	1	20	10/08/78	1022	10537	2	1	5	1760	20
11	372	1	20	10/08/78	1022	10537	2	2	2	1540	15
11	373	1	20	09/29/78	1548	09935	2	1	3	1680	15
11	374	1	20	10/08/78	1022	10537	2	1	5	1950	20
11	375	1	20	10/08/78	1022	10537	2	1	5	2050	20
11	376	1	20	09/29/78	1548	09935	2	2	4	1670	20
11	377	1	20	09/29/78	1548	09935	2	2	4	1750	15
11	378	1	20	10/08/78	1022	10537	2	2	5	1950	20
11	379	1	20	09/29/78	1548	09935	2	1	3	1650	15
11	380	1	20	10/08/78	1022	10537	2	1	5	1850	20
11	381	1	20	10/08/78	1022	10537	2	1	2	1550	15
11	382	1	20	10/08/78	1022	10537	2	1	3	1760	20
11	383	1	20	10/08/78	1022	10537	2	1	4	1620	20
11	384	1	20	09/29/78	1548	09935	2	2	5	1880	15
11	385	1	20	10/08/78	1022	10537	2	1	5	2050	20
11	387	1	20	10/08/78	1022	10537	2	2	3	1730	20
11	388	1	20	09/29/78	1548	09935	2	1	5	2200	20
11	389	1	20	10/08/78	1022	10537	2	2	5	1850	20

Appendix B (continued).

TTYPE	NUM	DISPO	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
11	390	1	20	09/29/78	1548	09935	2	1	5	2000	20
11	391	1	20	10/08/78	1022	10537	2	1	3	1660	20
11	393	1	20	10/08/78	1022	10537	2	2	5	2000	20
11	394	1	20	10/08/78	1022	10537	2	1	5	2040	20
11	395	1	20	10/08/78	1022	10537	2	2	5	1900	20
11	396	1	20	10/08/78	1022	10537	2	2	3	1900	20
11	397	1	20	10/08/78	1022	10537	2	1	3	1500	15
11	398	1	20	09/29/78	1548	09935	2	1	5	1850	20
11	399	1	20	10/08/78	1022	10537	2	1	5	2070	20
11	400	1	20	10/08/78	1022	10537	2	2	5	1900	20
11	401	1	20	09/29/78	1548	09935	2	2	5	1750	15
11	402	1	20	10/08/78	1022	10537	2	2	5	2050	20
11	403	1	20	10/08/78	1022	10537	2	2	5	1820	20
11	404	1	20	09/29/78	1548	09935	2	2	5	1830	20
11	405	1	20	10/08/78	1022	10537	2	1	4	1900	20
11	406	1	20	09/29/78	1548	09935	2	2	5	1840	15
11	407	1	20	09/29/78	1548	09935	0	1	5	1950	20
11	408	1	20	10/08/78	1022	10537	2	1	5	2100	25
11	409	1	20	10/08/78	1022	10537	2	1	5	1790	20
11	410	1	20	10/08/78	1022	10537	2	1	5	1960	20
11	412	1	20	10/08/78	1022	10537	2	2	5	1900	20
11	413	1	20	09/29/78	1548	09935	2	2	3	1660	15
11	414	1	20	10/08/78	1022	10537	2	2	5	1880	20
11	415	1	20	09/29/78	1548	09935	2	2	5	1960	15
11	416	1	20	10/08/78	1022	10537	2	2	5	1940	20
11	417	1	20	10/08/78	1022	10537	2	2	5	1820	20
11	418	1	20	09/29/78	1548	09935	2	2	5	2030	20
11	419	1	20	10/08/78	1022	10537	2	2	5	1850	20
11	420	1	20	10/08/78	1022	10537	2	1	5	2010	20
11	421	1	20	10/08/78	1022	10537	2	2	5	2000	20
11	422	1	20	09/29/78	1548	09935	2	1	3	1540	15
11	423	1	20	09/29/78	1548	09935	2	2	5	1950	20
11	424	1	20	10/08/78	1022	10537	2	2	5	1950	20
11	425	1	20	10/08/78	1022	10537	2	2	5	1780	20
11	426	1	20	10/08/78	1022	10537	2	1	5	2110	25
11	427	1	20	10/08/78	1022	10537	2	2	5	1980	20
11	428	1	20	10/08/78	1022	10537	2	1	4	1900	20
11	429	1	20	10/08/78	1022	10537	2	2	4	1750	20
11	430	1	20	09/29/78	1548	09935	2	2	5	1970	20
11	431	1	20	10/08/78	1022	10537	2	2	5	1870	20
11	432	1	20	09/29/78	1548	09935	2	2	5	1970	20
11	433	1	20	10/08/78	1022	10537	2	2	5	1870	20
11	434	1	20	09/29/78	1548	09935	2	2	5	1850	20
11	435	1	20	10/08/78	1022	10537	2	2	4	1850	20
11	436	1	20	10/08/78	1022	10537	2	2	5	2000	20
11	437	1	20	09/29/78	1548	09935	2	1	3	1650	15
11	438	1	20	09/29/78	1548	09935	2	1	5	2000	20
11	439	1	20	09/29/78	1548	09935	2	2	4	1910	20
11	440	1	20	09/29/78	1548	09935	2	2	3	1590	15

Appendix B (continued).

TTYPE	NUM	TDISPO	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
11	441	1	20	10/08/78	1022	10537	2	2	3	1690	20
11	442	1	20	09/29/78	1548	09935	2	1	5	1950	20
11	444	1	20	09/29/78	1548	09935	2	1	5	1990	20
11	445	1	20	09/29/78	1548	09935	2	1	5	1900	20
11	446	1	20	10/08/78	1022	10537	2	1	3	1600	20
11	447	1	20	10/08/78	1022	10537	2	1	5	1850	20
11	448	1	20	10/08/78	1022	10537	2	2	5	1850	20
11	450	1	20	10/08/78	1022	10537	2	2	5	1850	20
11	451	1	20	09/29/78	1548	09935	2	2	4	1830	15
11	452	1	20	09/29/78	1548	09935	2	2	5	1850	20
11	453	1	20	10/08/78	1022	10537	2	2	3	1760	20
11	454	1	20	09/29/78	1548	09935	2	1	5	1980	20
11	455	1	20	09/29/78	1548	09935	2	1	4	1670	15
11	456	1	20	10/08/78	1022	10537	2	1	5	1850	20
11	457	1	20	09/29/78	1548	09935	2	1	5	2100	20
11	458	1	20	10/08/78	1022	10537	2	2	5	1850	20
11	459	1	20	10/08/78	1022	10537	2	2	5	1980	20
11	461	1	20	09/29/78	1548	09935	2	1	5	2100	20
11	462	1	20	09/29/78	1548	09935	2	2	5	1830	15
11	463	1	20	09/29/78	1548	09935	2	1	5	1950	20
11	464	1	20	10/08/78	1022	10537	2	2	5	1750	20
11	465	1	20	10/08/78	1022	10537	2	2	5	1860	20
11	466	1	20	10/08/78	1022	10537	2	1	4	1650	20
11	467	1	20	10/08/78	1022	10537	2	1	3	1680	20
11	470	1	20	09/29/78	1548	09935	2	1	3	1500	15
11	472	1	20	09/29/78	1548	09935	2	2	4	1820	20
11	473	1	20	09/29/78	1548	09935	2	1	3	1650	15
11	476	1	20	09/29/78	1548	09935	2	1	5	1980	20
11	477	1	20	10/08/78	1022	10537	2	1	5	1850	20
11	481	1	20	10/08/78	1022	10537	2	2	5	1950	20
11	483	1	20	09/29/78	1548	09935	2	2	5	1850	20
11	485	1	20	10/08/78	1022	10537	2	1	3	1600	20
11	486	1	20	10/08/78	1022	10537	2	1	3	1560	20
11	487	1	20	09/29/78	1548	09935	2	2	5	1960	20
11	488	1	20	10/08/78	1022	10537	2	2	5	1850	20
11	489	1	20	10/08/78	1022	10537	2	1	5	2030	20
11	491	1	20	10/08/78	1022	10537	2	1	5	1770	20
11	492	1	20	10/08/78	1022	10537	2	2	5	1900	20
11	493	1	20	10/08/78	1022	10537	2	2	2	1550	20
11	495	1	20	10/08/78	1022	10537	2	2	5	2000	20
11	496	1	20	10/08/78	1022	10537	2	2	5	1900	20
11	498	1	20	10/08/78	1022	10537	2	2	4	1820	20
12	72	1	22	10/11/78	1039	10531	2	2	5	1900	0
12	74	1	22	10/11/78	1039	10531	2	1	5	1790	0
12	82	1	22	10/11/78	1039	10531	2	2	3	1690	0
12	93	1	22	10/11/78	1039	10531	2	1	3	1650	0
12	96	1	22	10/11/78	1039	10531	2	1	3	1640	0
12	107	1	22	10/11/78	1039	10531	2	2	5	1810	0
12	108	1	22	10/11/78	1039	10531	2	2	3	1830	0

Appendix B (continued).

TTYPE	NUM	DISPO	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
12	117	1	22	10/11/78	1039	10531	2	2	5	1860	0
12	118	1	22	10/11/78	1039	10531	2	1	5	2050	0
12	119	1	0	10/11/78	1039	10531	2	2	5	1910	0
12	150	1	22	10/11/78	1039	10531	2	2	5	1950	0
12	155	1	22	10/11/78	1039	10531	2	1	2	1530	0
12	157	1	22	10/11/78	1039	10531	2	2	5	1840	0
12	158	1	22	10/11/78	1039	10531	2	1	5	1910	0
12	160	1	22	10/11/78	1039	10531	2	2	3	1580	0
12	162	1	22	10/11/78	1039	10531	2	2	5	1800	0
12	164	1	22	10/11/78	1039	10531	2	2	5	1880	0
12	165	1	22	10/11/78	1039	10531	2	1	3	1790	0
12	166	1	22	10/11/78	1039	10531	2	2	5	1770	0
12	167	1	22	10/11/78	1039	10531	2	1	2	1560	0
12	169	1	22	10/11/78	1039	10531	2	2	5	1950	0
12	170	1	22	10/11/78	1039	10531	2	2	5	1950	0
12	172	1	22	10/11/78	1039	10531	2	2	3	1730	0
12	176	1	22	10/11/78	1039	10531	2	1	5	1880	0
12	177	1	22	10/11/78	1039	10531	2	2	5	1830	0
12	181	1	22	10/11/78	1039	10531	2	1	3	1790	0
12	182	1	22	10/11/78	1039	10531	2	1	5	1750	0
12	185	1	22	10/11/78	1039	10531	2	2	5	1910	0
12	186	1	22	10/11/78	1039	10531	2	1	5	1970	0
12	187	1	22	10/11/78	1039	10531	2	1	5	1680	0
12	190	1	22	10/11/78	1039	10531	2	1	5	2080	0
12	192	1	22	10/11/78	1039	10531	2	2	5	1940	0
12	197	1	22	10/11/78	1039	10531	2	2	5	1940	0
12	200	1	22	10/11/78	1039	10531	2	2	2	1580	0
12	201	1	22	10/11/78	1039	10531	2	2	5	1870	0
12	202	1	22	10/11/78	1039	10531	2	2	5	1880	0
12	203	1	22	10/11/78	1039	10531	2	1	2	1500	0
12	204	1	22	10/11/78	1039	10531	2	1	5	1950	0
12	205	1	22	10/11/78	1039	10531	2	2	3	1780	0
12	207	1	22	10/11/78	1039	10531	2	2	4	1800	0
12	208	1	22	10/11/78	1039	10531	2	2	5	2050	0
12	209	1	22	10/11/78	1039	10531	2	1	5	1900	0
12	211	1	22	10/11/78	1039	10531	2	2	4	1690	0
12	212	1	22	10/11/78	1039	10531	2	1	5	1880	0
12	214	1	22	10/11/78	1039	10531	2	2	5	1940	0
12	216	1	22	10/11/78	1039	10531	2	2	3	1720	0
12	217	1	22	10/11/78	1039	10531	2	1	5	2130	0
12	219	1	22	10/11/78	1039	10531	2	2	3	1710	0
12	220	1	22	10/11/78	1039	10531	2	1	4	1650	0
12	221	1	22	10/11/78	1039	10531	2	1	3	1820	0
12	222	1	22	10/11/78	1039	10531	2	2	5	1920	0
12	223	1	22	10/11/78	1039	10531	2	1	3	1670	0
12	225	1	22	10/11/78	1039	10531	2	1	5	2010	0
12	226	1	22	10/11/78	1039	10531	2	2	5	1900	0
12	227	1	22	10/11/78	1039	10531	2	2	5	1930	0
12	228	1	22	10/11/78	1039	10531	2	1	3	1780	0

Appendix B (continued).

TTYE	NUM	TDISPO	SDTTYE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
12	230	1	22	10/11/78	1039	10531	2	1	5	1850	0
12	231	1	22	10/11/78	1039	10531	2	1	2	1510	0
12	232	1	22	10/11/78	1039	10531	2	2	4	1850	0
12	233	1	22	10/11/78	1039	10531	2	2	3	1560	0
12	234	1	22	10/11/78	1039	10531	2	2	2	1600	0
12	235	1	22	10/11/78	1039	10531	2	2	5	1950	0
12	238	1	22	10/11/78	1039	10531	2	1	5	1880	0
12	239	1	22	10/11/78	1039	10531	2	1	5	1980	0
12	240	1	22	10/11/78	1039	10531	2	1	3	1750	0
12	243	1	22	10/11/78	1039	10531	2	1	5	2050	0
12	244	1	22	10/11/78	1039	10531	2	1	5	2000	0
12	246	1	23	10/07/78	1108	10511	2	2	3	1560	0
12	247	1	22	10/11/78	1039	10531	2	1	5	1950	0
12	248	1	22	10/11/78	1039	10531	2	1	5	2000	0
12	249	1	22	10/11/78	1039	10531	2	2	3	1660	0
12	251	1	23	10/07/78	1108	10511	2	2	3	1690	0
12	252	1	22	10/11/78	1039	10531	2	1	3	1380	0
12	253	1	22	10/11/78	1039	10531	2	1	5	2010	0
12	254	1	22	10/11/78	1039	10531	2	1	3	1710	0
12	255	1	22	10/11/78	1039	10531	2	1	5	2150	0
12	256	1	22	10/11/78	1039	10531	2	1	4	1750	0
12	257	1	22	10/11/78	1039	10531	2	1	5	2050	0
12	258	1	22	10/11/78	1039	10531	2	1	5	2200	0
12	260	1	22	10/11/78	1039	10531	2	2	5	2020	0
12	261	1	22	10/11/78	1039	10531	2	2	5	1730	0
12	262	1	22	10/11/78	1039	10531	2	2	3	1720	0
12	265	1	22	10/11/78	1039	10531	2	2	5	1950	0
12	266	1	22	10/11/78	1039	10531	2	2	5	1910	0
12	271	1	22	10/11/78	1039	10531	2	1	5	2040	0
12	272	1	22	10/11/78	1039	10531	2	1	5	1950	0
12	274	1	22	10/11/78	1039	10531	2	1	5	2140	0
12	275	1	22	10/11/78	1039	10531	2	2	5	2030	0
12	281	1	22	10/11/78	1039	10531	2	1	4	1770	0
12	282	1	23	10/07/78	1108	10511	2	1	2	1530	0
12	284	1	23	10/07/78	1108	10511	2	2	5	1910	0
12	285	1	23	10/07/78	1108	10511	2	2	3	1740	0
12	286	1	23	10/07/78	1108	10511	2	1	5	1880	0
12	287	1	23	10/07/78	1108	10511	2	1	3	1460	0
12	288	1	23	10/07/78	1108	10511	2	1	4	1750	0
12	289	1	23	10/07/78	1108	10511	2	2	2	1300	0
12	290	1	22	10/11/78	1039	10531	2	1	5	1740	0
12	292	1	23	10/07/78	1108	10511	2	2	5	2020	0
12	293	1	23	10/07/78	1108	10511	2	2	2	1540	0
12	294	1	23	10/07/78	1108	10511	10	1		1760	0
12	295	1	23	10/07/78	1108	10511	2	1	3	1750	0
12	296	1	23	10/07/78	1108	10511	2	1	5	2050	0
12	297	1	22	10/11/78	1039	10531	2	1	5	2040	0
12	298	1	23	10/07/78	1108	10511	2	1	2	1580	0
12	299	1	23	10/07/78	1108	10511	2	1	5	2010	0

Appendix B (continued).

TTYPE	NUM	TDISPO	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
12	300	1	22	10/11/78	1039	10531	2	2	5	1950	0
12	301	1	23	10/07/78	1108	10511	2	1	5	1960	0
12	302	1	23	10/07/78	1108	10511	2	1	5	1940	0
12	303	1	23	10/07/78	1108	10511	2	1	3	1640	0
12	304	1	23	10/07/78	1108	10511	2	2	4	1740	0
12	305	1	22	10/11/78	1039	10531	2	1	2	1550	0
12	306	1	23	10/07/78	1108	10511	2	1	5	2040	0
12	307	1	23	10/07/78	1108	10511	2	2	5	1940	0
12	308	1	23	10/07/78	1108	10511	2	2	5	1850	0
12	309	1	23	10/07/78	1108	10511	2	1	4	1780	0
12	310	1	22	10/11/78	1039	10531	2	2	5	1740	0
12	311	1	23	10/07/78	1108	10511	2	1	2	1570	0
12	312	9	22	10/11/78	1039	10531	2	1	5	1950	0
12	314	1	23	10/07/78	1108	10511	2	1	5	1950	0
12	315	1	22	10/11/78	1039	10531	2	2	5	1940	0
12	316	1	23	10/07/78	1108	10511	2	2	4	1830	0
12	317	1	23	10/07/78	1108	10511	2	2	2	1520	0
12	318	1	23	10/07/78	1108	10511	2	1	5	2020	0
12	319	1	23	10/07/78	1108	10511	2	2	5	1850	0
12	320	1	22	10/11/78	1039	10531	2	1	5	1950	0
12	321	1	23	10/07/78	1108	10511	2	2	5	1940	0
12	322	1	23	10/07/78	1108	10511	2	1	4	1650	0
12	323	1	23	10/07/78	1108	10511	2	1	5	1870	0
12	324	1	23	10/07/78	1108	10511	2	1	5	2160	0
12	325	1	23	10/07/78	1108	10511	2	1	5	1960	0
12	326	1	23	10/07/78	1108	10511	2	1	4	1770	0
12	327	1	23	10/07/78	1108	10511	2	1	5	1900	0
12	328	1	23	10/07/78	1108	10511	2	1	4	1750	0
12	330	1	23	10/07/78	1108	10511	2	1	5	1850	0
12	332	1	23	10/07/78	1108	10511	2	1	4	1850	0
12	333	1	23	10/07/78	1108	10511	2	1	3	1680	0
12	334	1	23	10/07/78	1108	10511	2	1	4	1780	0
12	335	3	23	10/07/78	1108	10511	2	2	5	1850	0
12	336	1	23	10/07/78	1108	10511	2	1	5	1900	0
12	337	1	23	10/07/78	1108	10511	2	1	5	1900	0
12	338	1	23	10/07/78	1108	10511	2	1	5	2000	0
12	339	1	23	10/07/78	1108	10511	2	1	5	2000	0
12	340	1	23	10/07/78	1108	10511	2	2	2	1450	0
12	341	3	22	10/11/78	1039	10531	2	2	3	1680	0
12	342	1	23	10/07/78	1108	10511	2	1	5	1900	0
12	343	1	22	10/11/78	1039	10531	2	1	5	1930	0
12	345	1	23	10/07/78	1108	10511	2	1	3	1640	0
12	346	1	23	10/07/78	1108	10511	2	2	5	1800	0
12	347	1	23	10/07/78	1108	10511	2	1	3	1700	0
12	350	1	23	10/07/78	1108	10511	2	2	5	1800	0
12	352	3	23	10/07/78	1108	10511	2	1	5	1780	0
12	353	1	23	10/07/78	1108	10511	2	1	3	1650	0
12	354	1	23	10/07/78	1108	10511	2	1	4	1800	0

Appendix B (continued).

TTY	NUM	TDISPO	SDTTY	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
12	355	1	23	10/07/78	1108	10511	2	1	5	2400	0
12	357	1	23	10/07/78	1108	10511	2	1	5	1810	0
12	358	1	23	10/07/78	1108	10511	2	2	3	1640	0
12	362	1	23	10/07/78	1108	10511	2	2	5	1920	0
12	366	1	23	10/07/78	1108	10511	2	1	5	2000	0
12	367	1	23	10/07/78	1108	10511	2	1	2	1580	0
12	368	1	22	10/11/78	1039	10531	2	2	4	1690	0
12	369	1	23	10/07/78	1108	10511	2	2	5	1800	0
12	370	1	23	10/07/78	1108	10511	2	2	5	1830	0
12	371	1	23	10/07/78	1108	10511	10	2		1620	0
12	373	1	23	10/07/78	1108	10511	2	2	5	1940	0
12	374	1	23	10/07/78	1108	10511	2	1	5	1760	0
12	375	1	23	10/07/78	1108	10511	2	2	5	1850	0
12	379	1	23	10/07/78	1108	10511	2	2	5	1740	0
12	382	1	23	10/07/78	1108	10511	2	2	3	1710	0
12	383	1	23	10/07/78	1108	10511	2	1	5	1900	0
12	384	1	23	10/07/78	1108	10511	2	2	5	1850	0
12	385	1	23	10/07/78	1108	10511	10	2		1680	0
12	387	1	23	10/07/78	1108	10511	2	2	5	1900	0
12	388	1	23	10/07/78	1108	10511	2	2	5	1900	0
12	389	1	23	10/07/78	1108	10511	2	2	5	1750	0
12	390	1	23	10/07/78	1108	10511	2	2	5	1950	0
12	394	1	23	10/07/78	1108	10511	2	2	5	1950	0
12	396	1	23	10/07/78	1108	10511	2	1	2	1580	0
12	398	1	23	10/07/78	1108	10511	2	1	5	1990	0
12	399	1	23	10/07/78	1108	10511	2	2	5	1860	0
12	400	1	23	10/07/78	1108	10511	2	1	5	2010	0
12	401	1	23	10/07/78	1108	10511	2	1	5	1950	0
12	402	1	23	10/07/78	1108	10511	2	1	4	1740	0
12	404	1	23	10/07/78	1108	10511	2	1	3	1660	0
12	405	1	23	10/07/78	1108	10511	2	1	5	2020	0
12	407	1	23	10/07/78	1108	10511	2	1	5	1850	0
12	409	1	23	10/07/78	1108	10511	2	1	3	1740	0
12	410	1	23	10/07/78	1108	10511	2	1	5	2000	0
12	411	1	23	10/07/78	1108	10511	2	2	4	1740	0
12	413	1	23	10/07/78	1108	10511	2	1	5	1940	0
12	414	1	23	10/07/78	1108	10511	2	1	5	1980	0
12	415	1	23	10/07/78	1108	10511	2	1	5	1980	0
12	419	1	23	10/07/78	1108	10511	2	1	5	2080	0
12	420	1	23	10/07/78	1108	10511	2	1	3	1620	0
12	427	1	23	10/07/78	1108	10511	2	1	5	1990	0
12	428	9	23	10/07/78	1108	10511	2	1	4	1700	0
12	429	1	23	10/07/78	1108	10511	2	1	3	1650	0
12	434	1	23	10/07/78	1108	10511	2	1	5	1960	0
12	437	1	23	10/07/78	1108	10511	2	1	5	1930	0
12	440	1	23	10/07/78	1108	10511	2	1	5	2060	0
12	442	1	23	10/07/78	1108	10511	2	1	2	1550	0
12	443	1	23	10/07/78	1108	10511	2	1	5	2100	0
12	447	1	23	10/07/78	1108	10511	2	2	5	1950	0

Appendix B (continued).

TTYPE	NUM	TDISPO	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
12	449	1	23	10/07/78	1108	10511	2	2	3	1550	0
12	450	1	23	10/07/78	1108	10511	2	1	4	1650	0
12	451	1	23	10/07/78	1108	10511	2	1	5	1800	0
12	457	1	23	10/07/78	1108	10511	2	1	5	1920	0
12	458	1	23	10/07/78	1108	10511	2	2	5	1850	0
12	473	1	22	10/11/78	1039	10531	2	2	5	1880	0
12	477	1	23	10/07/78	1108	10511	2	1	5	1950	0
12	478	1	22	10/11/78	1039	10531	2	2	5	1900	0
12	479	1	23	10/07/78	1108	10511	2	1	3	1600	0
12	480	1	22	10/11/78	1039	10531	2	2	3	1730	0
12	481	1	23	10/07/78	1108	10511	2	1	5	1750	0
12	482	1	23	10/07/78	1108	10511	2	1	4	1700	0
12	483	1	23	10/07/78	1108	10511	2	2	3	1700	0
12	484	1	23	10/07/78	1108	10511	2	2	4	1700	0
12	485	1	23	10/07/78	1108	10511	2	1	3	1600	0
12	486	1	23	10/07/78	1108	10511	2	1	4	1800	0
12	487	1	23	10/07/78	1108	10511	2	1	5	1950	0
12	488	1	23	10/07/78	1108	10511	2	1	3	1700	0
12	489	1	23	10/07/78	1108	10511	2	1	5	1950	0
12	490	1	23	10/07/78	1108	10511	2	1	4	1750	0
12	491	1	23	10/07/78	1108	10511	2	1	4	1700	0
12	492	1	23	10/07/78	1108	10511	2	1	3	1550	0
12	494	1	23	10/07/78	1108	10511	2	1	5	2050	0
12	495	1	23	10/07/78	1108	10511	2	2	2	1500	0
12	496	1	23	10/07/78	1108	10511	2	2	3	1700	0
12	497	1	23	10/07/78	1108	10511	2	2	5	1800	0
12	498	1	23	10/07/78	1108	10511	2	1	5	2000	0
12	499	1	23	10/07/78	1108	10511	2	1	4	1650	0
12	500	1	23	10/07/78	1108	10511	2	1	5	1950	0
13	60	1	23	10/13/78	1050	10439	2	2	4	1770	0
13	105	1	20	10/13/78	1050	10439	10	1		1750	0
13	122	1	20	10/13/78	1050	10439	2	2	2	1450	0
13	135	9	20	10/13/78	1050	10439	2	2	5	1850	0
13	142	1	20	10/13/78	1050	10439	10	1		1750	0
13	156	1	20	10/13/78	1050	10439	2	2	3	1700	0
13	165	1	20	10/13/78	1050	10439	10	1		1500	0
13	170	1	20	10/13/78	1050	10439	2	2	4	1800	0
13	184	9	20	10/13/78	1050	10439	2	2	5	1950	0
13	185	1	20	10/13/78	1050	10439	2	2	5	1900	0
13	189	1	20	10/13/78	1050	10439	10	1		1750	0
13	191	1	20	10/13/78	1050	10439	2	2	5	1830	0
13	197	1	20	10/13/78	1050	10439	2	1	3	1650	0
13	205	1	20	10/13/78	1050	10439	2	2	5	1840	0
13	208	1	20	10/13/78	1050	10439	2	2	4	1750	0
13	214	1	20	10/13/78	1050	10439	2	1	5	2000	0
13	215	9	20	10/13/78	1050	10439	2	1	5	1980	0
13	218	1	20	10/13/78	1050	10439	2	1	3	1460	0
13	222	1	20	10/13/78	1050	10439	10	1		1700	0
13	227	1	20	10/13/78	1050	10439	10	1		1700	0

Appendix B (continued).

TTYPE	NUM	TDISPO	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
13	238	1	20	10/13/78	1050	10439	2	2	5	1930	0
13	239	1	20	10/13/78	1050	10439	2	2	5	1860	0
13	240	1	20	10/13/78	1050	10439	2	2	5	1800	0
13	248	1	20	10/13/78	1050	10439	2	2	5	1950	0
13	250	1	20	10/13/78	1050	10439	10	1		1690	0
13	255	1	20	10/13/78	1050	10439	10	2		1700	0
13	257	1	20	10/13/78	1050	10439	2	2	3	1700	0
13	260	1	20	10/13/78	1050	10439	10	1		18	0
13	265	9	20	10/13/78	1050	10439	2	2	5	1800	0
13	267	1	20	10/13/78	1050	10439	2	1	2	1470	0
13	278	1	20	10/13/78	1050	10439	2	2	5	1800	0
13	279	1	20	10/13/78	1050	10439	2	1	3	1740	0
13	283	1	20	10/13/78	1050	10439	2	2	5	1770	0
13	288	1	20	10/13/78	1050	10439	2	2	4	1690	0
13	292	1	20	10/13/78	1050	10439	2	2	3	1470	0
13	296	1	20	10/13/78	1050	10439	2	2	3	1650	0
13	297	1	20	10/13/78	1050	10439	10	1		1670	0
13	300	1	20	10/13/78	1050	10439	10	2		1700	0
13	301	1	20	10/13/78	1050	10439	10	1		1760	0
13	312	1	24	10/03/78	1603	10042	2	2	5	1930	0
13	323	1	24	10/03/78	1603	10042	2	1	5	1910	0
13	324	1	24	10/03/78	1603	10042	2	1	5	1920	0
13	326	1	24	10/03/78	1603	10042	2	2	5	1850	0
13	329	1	24	10/03/78	1603	10042	2	2	5	1900	0
13	332	1	24	10/03/78	1603	10042	2	1	5	2090	0
13	337	1	24	10/03/78	1603	10042	2	1	4	1690	0
13	348	1	24	10/03/78	1603	10042	2	2	4	1850	0
13	349	1	24	10/03/78	1603	10042	2	2	3	1760	0
13	355	1	24	10/03/78	1603	10042	2	2	5	1760	0
13	361	1	20	10/13/78	1050	10439	2	2	5	1950	0
13	376	1	24	10/03/78	1603	10042	2	2	5	1870	0
13	384	1	20	10/13/78	1050	10439	10	2		1400	0
13	401	1	24	10/03/78	1603	10042	2	2	2	1480	0
13	402	1	24	10/03/78	1603	10042	2	1	5	1990	0
13	411	1	24	10/03/78	1603	10042	2	2	5	1820	0
13	412	1	24	10/03/78	1603	10042	2	2	4	1790	0
13	413	1	24	10/03/78	1603	10042	2	1	3	1670	0
13	415	1	24	10/03/78	1603	10042	2	2	3	1640	0
13	417	1	24	10/03/78	1603	10042	2	2	5	1960	0
13	418	1	24	10/03/78	1603	10042	2	2	4	1750	0
13	419	1	24	10/03/78	1603	10042	2	2	4	1720	0
13	421	1	24	10/03/78	1603	10042	2	2	2	1580	0
13	423	1	24	10/03/78	1603	10042	2	1	3	1690	0
13	424	1	24	10/03/78	1603	10042	2	2	5	1860	0
13	425	1	24	10/03/78	1603	10042	2	2	4	1810	0
13	427	1	24	10/03/78	1603	10042	2	2	5	1860	0
13	430	1	24	10/03/78	1603	10042	2	1	5	1850	0
13	432	1	24	10/03/78	1603	10042	2	2	5	1870	0
13	436	1	24	10/03/78	1603	10042	2	2	5	1750	0

Appendix B (continued).

TTYPE	NUM	TDISPO	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	LENGTH	INJAMT
13	442	1	24	10/03/78	1603	10042	2	2	3	1700	0
13	454	1	24	10/03/78	1603	10042	2	2	5	1900	0
13	457	1	24	10/03/78	1603	10042	2	2	3	1810	0
13	458	1	24	10/03/78	1603	10042	2	2	5	1960	0
13	461	1	24	10/03/78	1603	10042	2	1	5	2060	0
13	467	1	24	10/03/78	1603	10042	2	2	5	1940	0
13	470	1	24	10/03/78	1603	10042	2	2	4	1850	0
13	472	1	24	10/03/78	1603	10042	2	1	5	1840	0
13	473	1	24	10/03/78	1603	10042	2	1	5	1910	0
13	478	1	24	10/03/78	1603	10042	2	1	3	1790	0
13	482	1	24	10/03/78	1603	10042	2	1	5	1950	0
13	485	1	24	10/03/78	1603	10042	2	2	2	1550	0
13	486	1	24	10/03/78	1603	10042	2	1	3	1740	0
13	487	1	24	10/03/78	1603	10042	2	2	5	1850	0
13	488	1	24	10/03/78	1603	10042	2	2	3	1790	0
13	491	1	24	10/03/78	1603	10042	2	1	3	1700	0
13	492	1	24	10/03/78	1603	10042	2	1	3	1560	0
13	494	1	24	10/03/78	1603	10042	2	2	5	1850	0
13	496	1	24	10/03/78	1603	10042	2	1	4	1600	0
13	497	1	24	10/03/78	1603	10042	2	2	5	1940	0
13	498	1	24	10/03/78	1603	10042	2	1	5	2130	0
13	502	1	24	10/03/78	1603	10042	2	2	5	1790	0
13	508	1	24	10/03/78	1603	10042	2	2	3	1660	0
13	519	1	24	10/03/78	1603	10042	2	1	5	2090	0
29	3	1	0	10/03/78	1603	10042	2	1	5	2100	0
29	4	1	0	10/03/78	1603	10042	2	2	5	1730	0
29	5	3	0	10/07/78	1108	10511	2	1	5	2050	0
29	6	3	0	10/11/78	1039	10531	2	1	5	1850	0
29	7	1	0	10/11/78	1039	10531	2	1	5	2110	0
29	8	3	0	10/13/78	1050	10429	2	1	5	1900	0

Appendix C. Selected fields from part of the database, RETURN.DBF, containing recapture records of dolphins tagged in 1978. The data fields are explained in Appendix A. Latitude and longitude are north and west. Species, vessel and cruise codes are NMFS, SWFC codes.

TTYPE	NUM	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	VESSEL	CRUISE
11	253	20	01/14/79	1420	10954	2	2	5	439	462
12	335	23	11/25/78	1330	10711	2	2	5	186	443
12	341	22	10/23/78	1110	10622	2	2	3	198	434
12	352	23	10/23/78	1110	10622	2	1	5	198	434
29	5	0	10/08/78	1056	10522	2	1	5	198	434
29	6	0	10/13/78	1050	10440	2	1	5	198	434
29	8	0	10/15/78	1052	10542	2	1	5	198	434

Appendix D. Selected fields from part of the database, RESIGHT.DBF, containing resightings of dolphins tagged in 1978. The data fields are explained in Appendix A. Latitude and longitude are north and west, except for one unconfirmed resight which had south latitude. Species, vessel and cruise codes are NMFS, SWFC codes.

TTYE	NUM	SDTTYE	DATE	LAT	LONG	SPECIES	SEX	COLOR	VESSEL	CRUISE
11	195	20	10/23/78	1110	10622	2	1	5	198	434
11	236	20	10/23/78	1110	10622	2	1	4	198	434
11	346	20	11/25/78	1252	10657	2	1	5	198	434
11	353	20	10/11/78	1039	10531	2	2	3	198	434
12	312	22	10/13/78	1050	10439	2	1	5	198	434
12	428	23	10/13/78	1008	10337	2	1	4	9999	0
13	135	20	10/15/78	1051	10541	2	2	5	198	434
13	184	20	10/15/78	1051	10541	2	2	5	198	434
13	215	20	10/15/78	1051	10541	2	1	5	198	434
13	265	20	10/15/78	1051	10541	2	2	5	198	434
14	1	20	10/09/78	1023	10617	2			198	434
14	2	20	10/09/78	1023	10617	2			198	434
14	5	0	10/15/78	1051	10528	2			198	434
14	6	0	10/15/78	1051	10528	2			198	434
14	7	0	10/15/78	1051	10528	2			198	434
14	13	0	11/10/78	1037	10338	2			386	446
14	14	0	11/23/78	1250	10735	2		5	186	443
14	15	0	11/23/78	1205	10731	2			198	451
14	17	0	11/25/78	1252	10657	2			198	451
14	18	0	11/25/78	1252	10657	2			198	451
14	19	0	11/25/78	1330	10711	2		5	186	443
14	22	0	12/05/78	0143	10632	0			444	448
14	23	0	01/11/79	1403	10434	2			386	446
14	24	0	01/22/79	1326	10827	2			331	475
14	26	0	01/21/79	1344	10841	2			186	468
14	27	0	01/27/79	1300	10234	2			9999	0
14	28	0	02/19/79	1426	09945	2			9999	0
14	29	0	02/19/79	1426	09945	2			9999	0
14	30	0	02/25/79	1345	09940	0			9999	0
14	36	0	02/04/79	1158	10052	2			187	465
14	37	0	03/01/79	1405	10829	2			187	465
14	38	0	01/14/79	1412	10352	2		4	400	466
14	39	0	04/01/79	1345	10329	2		5	367	472
14	40	0	01/15/79	1201	10813	0			448	469
14	43	0	03/28/79	1328	10240	0			448	469
14	48	0	03/31/79	1211	10023	2		5	437	473
14	59	0	09/22/79	1107	10710	2		5	385	540
14	60	0	11/03/79	1145	11257	2			331	541
14	61	0	04/26/80	1217	10817	2			451	570
15	8	22	10/15/78	1051	10528	2			198	434
15	9	22	10/15/78	1051	10528	2			198	434
15	10	23	10/15/78	1051	10528	2			198	434
15	16	0	11/24/78	1258	10710	2			198	434
15	20	0	12/01/78	1239	10210	2		5	198	451
								3	397	445

Appendix D (continued).

TTYPE	NUM	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	VESSEL	CRUISE
15	47	0	03/31/79	1211	10023	2			437	473
15	51	0	03/15/79	1414	10444	2			452	479
15	54	0	04/14/79	1307	10450	2			198	497
16	3	0	10/15/78	1051	10541	2	2	5	198	434
16	4	0	10/15/78	1051	10541	2			198	434
16	11	20	10/15/78	1051	10528	4			198	434
16	12	20	10/15/78	1051	10528	4			198	434
16	58	27	07/22/79	1133	13024	2			451	534
17	21	0	12/04/78	1250	10836	2			198	451
17	25	0	01/31/79	1027	10234	2			331	475
17	31	0	02/18/79	1443	09909	0			9999	0
17	32	0	02/27/79	1500	10343	0			341	485
17	35	0	01/28/79	1027S	08816	2			368	456
17	42	0	03/28/79	1328	10240	0			448	469
17	44	0	01/20/79	1317	10331	2			437	473
17	45	0	01/21/79	1307	10310	0			473	3
17	46	0	01/21/79	1327	10310	2			473	4
17	49	0	04/01/79	1356	10134	2		5	473	0
17	50	0	01/22/79	1247	10622	2			439	462
17	52	0	10/17/78	1118	15545	0			9999	0
17	53	0	10/25/78	0204	15814	0			9999	0
17	56	27	07/22/79	1133	13024	2			451	534
17	57	27	07/22/79	1133	13024	2			451	534
18	33	0	02/26/79	1330	10845	0			198	497
18	34	0	02/26/79	1530	11000	0			198	497
18	41	0	01/15/79	1201	10813	0			448	469
22	32	22	08/17/79	0850	10230	2			385	540
22	39	0	03/05/80	1231	09453	0			435	540
23	28	23	07/31/79	1804	11442	2			385	540
23	29	23	08/07/79	0935	12016	2			385	540
23	36	0	09/16/79	1732	10356	10			9999	0
23	37	0	01/26/80	1731	10420	0			435	481
23	43	0	03/10/80	1210	10938	2			445	597
23	44	0	03/10/80	1210	10938	2			445	597
24	5	24	05/07/79	1011	11245	0			451	506
24	38	0	02/09/80	1251	10918	0			435	575
24	40	0	02/25/80	1414	09745	2			315	591
24	45	0	03/31/80	1223	10707	2			414	586
25	1	25	05/01/79	1047	12103	2			451	506
25	3	25	05/01/79	1047	12103	2			451	506
25	4	25	05/01/79	1047	12103	2			451	506
25	8	25	05/13/79	0752	09555	2			451	506
25	9	25	05/13/79	0752	09555	2			451	506
25	13	25	05/14/79	0716	09553	2			451	506
25	14	25	05/14/79	0716	09553	2			451	506
25	15	25	05/14/79	0716	09553	2			451	506
25	16	25	05/15/79	0715	09443	2			451	506
25	18	25	05/18/79	0831	09423	2			451	506
25	19	25	05/18/79	0831	09423	2			451	506

Appendix D (continued).

TTYPE	NUM	SDTTYPE	DATE	LAT	LONG	SPECIES	SEX	COLOR	VESSEL	CRUISE
25	22	25	07/02/79	1248	10503	2			451	506
25	25	0	07/04/79	1432	10800	2		2	451	506
26	2	26	05/01/79	1047	12103	2			451	506
26	7	26	05/13/79	0752	09555	2	2		451	506
26	11	26	05/14/79	0716	09553	2			451	506
26	12	26	05/14/79	0716	09553	2			451	506
26	20	26	07/02/79	1248	10503	2			451	506
26	21	26	07/02/79	1248	10503	2			451	506
26	23	26	07/02/79	1303	10514	2			451	506
26	24	0	07/02/79	1303	10514	2			451	506
26	26	0	07/04/79	1436	10817	2			451	506
26	27	0	07/05/79	1439	10857	2			451	506
27	6	27	05/07/79	1011	11245	2			451	506
27	10	26	05/13/79	0752	09555	2			451	506
27	17	26	05/15/79	0715	09443	2			451	506
27	30	0	08/15/79	0925	10307	2			385	540
27	31	0	08/17/79	0907	10215	2			385	540
27	33	0	08/30/79	0903	10032	2			385	540
27	34	0	09/14/79	1040	10830	2			385	540
27	35	0	09/25/79	1235	10908	2			385	540
27	41	0	03/01/80	0718	08927	2			315	591
27	42	0	03/11/80	0711	09032	2			315	591

